REMARKS

Claims 1 – 3 were presented for examination and all were rejected under 35 U.S.C. § 103. Claims 1 – 3 are being amended, and claims 4 – 15 are being added. In view of the above amendments and following remarks, withdrawal of the rejections of claims 1 – 3 and consideration of claims 4 – 15 are respectfully requested.

CLAIM REJECTIONS UNDER 35 U.S.C. § 103 – Murphy

In paragraph 2 of the Office Action, claim 1 was rejected under 35 U.S.C. § 103 (b) as being unpatentable over by U.S. patent number 6,206,584 to Hastings ("Hastings") in view of patent number 5,659,753 to Murphy ("Murphy"). The rejection is traversed. Hastings and Murphy, either alone or in combination, do not disclose every element of the claimed invention. The alleged motivation for combining the teachings of Hastings and Murphy is improper. Showing a prima facie case of obviousness failed.

The cited paragraph of col. 2, lines 55-63 of Hastings discloses modification of code, e.g., an object code file is expanded by inserting additional instructions and/or data between preexisting instructions and data, the new offsets in the file are checked and modified.

The cited paragraph of col. 9, line 37 to col. 10, line 43 discloses that during execution of the modified application program on a successful call to "malloc," the status codes change based on the status bits. The cited FIG. 7 shows the 32-bit virtual address space. The bytes in the heap are manipulated via the malloc, realloc, and free functions. The stack pointer moves up and down depending on the state, and movements of the stack pointers may be treated as an allocation or deallocation. The paragraph also discloses tracking the status of memory. The Office Action alleged that identifying instruction and status bits used to allocate stack memory is equivalent

to identifying parameters associated statement and malloc() inherently suggests use of input parameters. However, claim is being amended to recite in the alternative language that "identifying first parameters used in the first statement," which is patentably distinguished from Hastings' status bits. The Office Action also alleged that reallocating memory structures using stack status bits is equivalent to generating new parameters for use in the statement to allocate stack memory. Applicants disagree with this allegation. However, because the claim is amended to claim in the alternative language, i.e., "by using the number N and the first parameters as inputs, generating second parameters for use in a second statement to allocate the N number of registers," the allegation is moot because Hastings does not disclose this limitation of the claimed invention.

The cited paragraph of col. 11 line 32 to col. 12 line 21 of Murphy discloses that the object code files are expanded with extra dummy entries between each datum or array of data. The extra entries are assigned status, established with locations. Memory is allocated to detect array bounds violations. Methods of tracking arrays have complications.

The cited paragraph of col. 48, line 29 to col. 49, line 46 of Murphy discloses that a reference to a variable symbol in the CIL yields the address of a storage location or the name of a register. The variable include static, local, dynamic, etc. There are several kinds of dynamic stack allocation.

As can bee seen, Hastings and Murphy, either a lone or in combination, do not disclose allocating N number of registers. In fact, the Office Action admitted that "Hastings does not explicitly disclose that allocating stack memory is allocation an N numbers of registers." Because Hastings failed to disclose this limitation, for the prima facie case of obviousness based on combining the two teachings to stand, Murphy must provide the limitation missed in Hastings. However, Murphy failed to

do so. That is, Murphy failed to disclose allocating N number of registers. Further, Hastings and Murphy, either alone or in combination, failed to disclose "by using the number N and the first parameters as inputs, generating second parameters for use in a second statement to allocate the N number of registers."

Hastings and Murphy, either alone or in combination, also failed to disclose that the N allocated numbers of registers "are for use in code instrumentation of the block of programming code." Even though Hastings discusses modification of code, Hastings does not disclose the allocated N numbers of registers are for use in such modification.

The Office Action asserted that "[i]n case Hastings method does not include stack memory in terms of stack registers, it would have been obvious . . . to implement the dynamic reallocation of stack memory as suggested by Hastings as re-allocation of stacked registers as taught by Murphy, i.e., allocating a number N of registers, because registers are the most efficient means for storing fleeting values and data for use in the execution flow of a program e.g. so as to provide time efficiency to the execution to the dynamic modification of code as by Hastings which can lead to potential delay." Regardless of whether the assertion that "registers are the most efficient means for storing fleeting values and data for use in the execution flow of a program," is true or not, there is no indication in either Hastings or Murphy that suggests combining the two teachings. The alleged motivation to combine the two teachings is a general conclusory statement without specificity that suggests combining Hastings and Murphy. Showing a prima facie of obviousness failed. Further, as discussed above, even if the two teachings may be combined, they do not disclose every element of the claimed invention.

In paragraph 3, claims 2 and 3 were rejected under 35 U.S.C. 103(a) as being unpatentable over Hastings in view of Murphy as applied to claim 1, and further in

view of "A Detailed Tutorial" by Swerr Jarp ("Jarp"). Even though Jarp discloses a

statement having input registers, local registers and output registers, Jarp does not

provide the limitations missed in Hastings and Murphy. That is, Hastings, Murphy,

and Jarp, even if combined, do not disclose every elements of the claimed invention.

Examples of limitations missed in Hastings and Murphy but failed to be provided by

Jarp include: allocating N number of registers; by using the number N and the first

parameters as inputs, generating second parameters for use in a second statement to

allocate the N number of registers; and the N allocated numbers of registers are for use

in code instrumentation of the block of programming code.

The alleged motivation for combining the three teachings of Hastings,

Murphy, and Jarp is improper. The Office Action alleged that "it would have been

obvious . . . to implement the allocation instructions as suggested by Hastings and

further enhanced by Murphy as to provide parameters passed to such instructions as

suggested by Jarp." The Office Action then explained it is "because the status of the

registers being used as input registers, local registers, and output registers to associate

data change in conjunction with procedure call/return in the stack context as taught by

Hastings would be beneficial and needed information as to how registers have been

used so to provide efficient registers reuse in view of the well-known concept to

optimize the use of registers (e.g. Hastings, Allocate/Deallocate – Fig. 6)." This

allegation and explanation impermissibly rely on hindsight, and are a general and

conclusory statement without specificity showing suggestions in any of the three

teachings of Hastings, Murphy and Jarp that they be combined. The alleged

motivation for combing is improper, and showing of a prima facie case of obviousness

failed.

Regarding claim 3, the Office Action admitted that "Hasting in combination

with Murphy . . . does not explicitly disclose modifying the number O of the

parameters to generate the number O of the new parameter." The Office Action then concluded "in view of the rationale from the rejection in claim 2, this limitation would have been obvious because the step of providing allocation instructions with specific input, output parameters as taught by Jarp would have met the required O number of new parameters." Claim 3 is being amended to claim in the alternative language corresponding to the language in claims 2 and 1. Even though Jarp shows a statement involving input registers, local registers, and output registers, Jarp does not teach, suggest, or make obvious the limitation that the step of generating the second parameters comprises the step of modifying the number O of the first parameters to generate the number O of the second parameters. For the rejection to stand, teachings and/or suggestions of the limitation must be shown, a conclusion that the limitation is obvious is improper. Further, there is no explanation why "providing allocation instructions with specific input, output parameters as taught by Jarp would have met the required O number of new [second] parameters."

ADDED CLAIMS

Added claims 4 and 5 depend from claims 2 and 1, and are therefore patentable for at least the same reasons as claims 2 and 1. Claims 4 and 5 also include limitations not taught, suggested or made obvious by Hastings, Murphy, or Jarp, such as "using the number N and the number O of the first parameters as inputs in generating the number O of the second parameters" and "the number O of the second parameters equals the number N plus the number O of the first parameters." Claims 4 and 5 therefore are patentable for these added limitations.
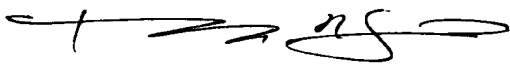
Claims 6-10 and 11-15 recite limitations corresponding to claims 1-5, and are therefore patentable for at least the same reasons as claims 1-5.

SUMMARY

In conclusion, Applicants respectfully submit that pending and added claims

clearly present subject matter that is patentable over the prior art of record, and

therefore request that the Examiner withdraw the rejections of the pending claims,

consider the added claims, and pass the application to issue.

Respectfully submitted,

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